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**FOLDABLE ELECTRONIC BOOK****CROSS REFERENCE TO RELATED APPLICATION**

This application is a continuation application of U.S. application Ser. No. 11/329,040 filed Jan. 11, 2006, which is a continuation application of U.S. application Ser. No. 09/942,602 filed on Aug. 31, 2001, all of which are herein incorporated by reference.

**TECHNICAL FIELD**

The present invention relates to an electronic book or "e-book" being a device that presents text and/or graphics, for example the text of a book or magazine and associated pictures, upon an electronic screen. Such devices typically comprise a display screen, for example an LCD screen under control of a programmed microprocessor. The microprocessor reads data from a data storage medium such as a Micro-CD-ROM or memory card such as a PCMCIA card and converts the data into text and/or graphics that are displayed on the LCD screen.

**DESCRIPTION OF RELATED ART**

One commercially available electronic book is the REB1100 available from RCA. That device has a monochrome LCD touch screen and a built in 33.6 kbps v.34 capable modem that allows digital book data to be downloaded from a remote database into an onboard 8 MB memory.

In U.S. Pat. No. 6,229,502 there is described an electronic book which is configured to read digital book data from a ROM such as a PCMCIA card.

In U.S. Pat. No. 6,037,954 to McMahon there is described an electronic book which includes a Micro-CD-ROM drive for reading digital book data encoded onto a Micro-CD-ROM.

One problem with these devices is that they rely on data storage or distribution systems which are relatively expensive and complex to implement.

**SUMMARY**

According to an embodiment of the present invention, an electronic book comprises a first housing portion; a second housing portion; a cylindrical spine interposed between the first and second housing portions and pivotally connecting the first housing portion to the second housing portion; a flexible display screen fast with inner faces of the first and second housings and spanning the spine; first and second microprocessor circuitry respectively positioned in the first and second housing portions behind the flexible display screen; a scan head for scanning a data card, the scan head provided on the first microprocessor circuitry on a surface opposite the flexible display screen, the scan head facing away from the flexible display screen; and an internal cartridge for holding a card fed pass the scan head, the internal cartridge having a clear backing window through which an un-scanned surface of the card is visible. The spine defines a recess to accommodate a curvature of the screen when the first and second housing portions are pivoted about the spine in a closed condition.

**BRIEF DESCRIPTION OF DRAWINGS**

FIG. 1 is a first perspective view of an apparatus according to a preferred embodiment of the present invention.

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FIG. 2 is a second perspective view of the apparatus.

FIG. 3 is a third perspective view of the apparatus.

FIG. 4 is a perspective view of the apparatus shown open for use.

FIG. 5 is an exploded perspective view of the apparatus.

FIG. 6 is a system block diagram of the apparatus.

FIG. 7 is a cross sectional view of the apparatus open and through line B-B' of FIG. 4.

FIG. 8 is a cross sectional view of the apparatus closed and through line B-B' of FIG. 4.

FIG. 9 is a cross sectional view of the apparatus through line A-A' of FIG. 4.

**DETAILED DESCRIPTION**

The drawings illustrate an electronic book that is configured to read data encoded as a pattern printed on a sheet of card.

With reference to FIGS. 1 and 2, there is depicted a view of the front of an electronic book or "e-book" 2 according to a preferred embodiment of the invention. The e-book has a foldable housing including first and second housing portions in the form of front door 6 and a rear door 8 each pivotally connected to a spine 16. A clasp 14 holds the two doors closed when the e-book is not being used. The outside of the front door 6 features a clear window 10 through which a data card 18 is visible. The data card is inserted under the window through a card slot 24 and is engaged by a roller and fed into an internal cartridge 38 (FIG. 5). On one side of the data card there is printed information for a user to read such as the title and author of a book. Accordingly a user of the e-book is able to determine at a glance the content that the e-book is loaded with. The text of the book is encoded as a pattern on the reverse side of the data card.

At the top of the outside of front door 6 there is located an eject button 12. Upon operation of the eject button, card 18 is ejected from the e-book by the internal roller mechanism.

At the base of spine 16 there is located a battery cover 4 that covers a battery compartment for accommodating two AAA size batteries that power the e-book.

The outside of rear door 8 is visible in FIG. 3. Storage magazine 20 is hinged to swing out from rear door 8 to a position, as shown, where data cards 22 may be stored or selected for removal and insertion into card slot 24.

FIG. 4 shows the e-book with the front and rear doors swung about spine 16 to an open position. In that position a flexible LCD screen 24 is visible. It is preferred that a VGA resolution monochrome screen be used being a passive bi-stable reflective polymer doped liquid crystal (PDLC) display fabricated on a flexible polymer substrate.

By using a bi-stable screen power consumption is reduced as the screen draws zero current while presenting a static image.

The LCD screen operatively displays the text of the book encoded on card 24. A user of the e-book is able to control which page of text is presented by means of joystick 26.

The internal arrangement of the e-book may be comprehended by referring to FIG. 5 which is an exploded view. It will be noted that on the underside of LCD 24 there are located two PCBs 26 and 28. PCB 28 has mounted directly upon it a scanner head 30. The PCBs 26 and 28 are loaded with various electronic components including a microprocessor, RAM and ROM memory chips and power supply conditioning circuitry. It is envisaged that a VLIW microprocessor and accompanying circuitry, as described in U.S. patent application Ser. No. 09/113,053 and hereby incorporated by